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ever to winter injury. Peach yellows is thought by the writer to be a contagious disease, though the germ has never been discovered. It behaves in many ways, though not in all respects, like pear blight. For example, when the pear blight germ is absent from a locality there can be no blight no matter how favorable conditions may be. In the same way peach yellows has a distinct range in the northern and eastern part of the United States. It has increased its area rather rapidly. No matter what the conditions may be of soil, climate, method of culture, fertilizer, etc., when the yellows reaches a district it attacks the orchards.

Pear blight has its ups and downs. Some years the conditions are favorable and some years unfavorable for the spread of the disease. Peach yellows behaves in the same way. Pear blight spreads from colonies or infection centers. Peach yellows behaves in exactly the same way.

Pear blight lives over winter in the "hold-over" cases, this becoming the new infection centers each spring. With peach yellows every case is a hold-over till the tree dies.

Pear blight can be inoculated artificially by introducing the germ or the diseased tissues. Peach yellows can be inoculated by introducing a bit of living tissue. Both diseases are unknown elsewhere in the world, although their host plants are foreign to this country and are cultivated widely over the earth.

Pear blight was mistaken for frost injury before its bacterial nature was discovered.

We know peach yellows as a distinct disease, through a number of definite symptoms. The distinctive symptoms of peach yellows are, first, the premature, red-spotted fruit; second, wiry or bushy vertical sprouts of a peculiar character. Peach yellows has also certain leaf symptoms, such as yellowing and curling. These symptoms are also shared by the disease known as "little peach." The leaf symptoms, however, are not entirely reliable, as somewhat similar symptoms, often difficult to distinguish, are produced by winter injury to various parts of the trunk, collar and root, the peach borer, the root aphid, sour soil, chlorosis, or even nitrogen starvation or soil poverty.

Frost collar girdle may even produce slightly premature fruit as other girdling will do, but it is not typical, for the yellows and the symptom would not be reproduced in budding. True yellows is often mixed up in the same orchards with frost injury and other similar confusing symptoms. Oftentimes, however, through examination of

doubtful trees there will be found other symptoms than yellows.

Frost injuries, particularly, since 1903 and 1904, occurred from Michigan to New York and New England in the yellows area. The eastern part of the frost injury area overlaps a district in which there has been an extensive outbreak of yellows. This district extends from New England, eastern and southern New York to Tennessee and North Carolina. Frost injury has been severe without accompanying yellows in western New York, Ohio and Michigan. Yellows has been severe without frost injury in New Jersey, Delaware, Maryland, southern Pennsylvania to Tennessee and North Carolina. The overlapping of these two troubles in southern New York and New England need not, therefore, be confusing.

C. L. SHEAR,
Secretary-Treasurer

SOCIETIES AND ACADEMIES

THE CHEMICAL SOCIETY OF WASHINGTON

THE 198th meeting and annual smoker was held at Fritz Reuters on Thursday, April 14. The attendance at the smoker, which consisted of a beefsteak dinner, was 57. The following papers were read at the meeting:

The Effect of Drugs and Diet upon the Thyroid:
REID HUNT.

Dr. Hunt discussed the changes in resistance of animals to certain poisons caused by the administration of various iodine compounds. Evidence was presented that some of these changes are caused by an effect upon the thyroid gland and that certain iodine compounds have a selective action upon this gland, that, in other words, they are thyreotropic. Diet also was found to have marked effects upon resistance to certain poisons; some of these effects seem to be exerted, at least in part, through the thyroid gland.

Contribution to the Knowledge of Phosphoric Acid: B. HERSTEIN and LYMAN F. KEBLER.

Dr. Herstein said, in part, that a method having been found to determine each of the three hydrates of phosphorus pentoxid, when mixed with one another, commercial glacial phosphoric acid and metaphosphoric acid as prepared in the laboratory, were subjected to a study, the results of which showed that: (1) contrary to the hitherto accepted theory, metaphosphoric acid in changing to the ortho-form first becomes pyrophosphoric acid; (2) the percentage rate of inversion is very little, if at all, influenced by dilution.

Extensive tables and diagrams were prepared in support of the above.

Separation and Determination of Cocain and Strychnin, and Atropin and Strychnin when they Occur Together: H. C. FULLER.

Mr. Fuller explained that the alkaloids are extracted from the drug product and weighed together, using proper precautions to obtain them in a pure condition. They are then dissolved in alcoholic potash, transferred to a pressure flask and heated over the steam bath for one hour, which completely hydrolyzes the cocain and atropin, but does not affect the strychnin. The latter is then separated and weighed.

J. A. LECLERC,
Secretary

THE AMERICAN MATHEMATICAL SOCIETY

THE one hundred and forty-eighth regular meeting of the society was held at Columbia University on Saturday, April 30. The attendance at the two sessions included forty-two members. Ex-President W. F. Osgood occupied the chair at the morning session, Ex-President T. S. Fiske and Professor Frank Morley at the afternoon session. The council announced the election of the following persons to membership in the society: Mr. F. W. Beal, Princeton University; Professor W. J. Berry, Brooklyn Polytechnic Institute; Mr. J. K. Lamond, Yale University; Mr. R. M. Mathews, University High School, Chicago, Ill.; Professor F. E. Miller, Otterbein University; Mr. J. E. Rowe, Johns Hopkins University; Mr. W. H. Terrell, Clyde, N. C.; Mr. George Wentworth, Exeter, N. H.; Mr. W. A. Wilson, Yale University. Eight applications for membership in the society were received. The total membership is now 630.

Professor Maxime Bôcher was elected a member of the editorial board of the *Transactions*, to succeed Professor W. F. Osgood at the expiration of the latter's term of office. Professor L. E. Dickson was appointed to fill the unexpired term of Professor E. B. Van Vleck, who retires from the board in July.

The committee of publication was directed to publish in book form the lectures delivered at the Princeton Colloquium in September, 1909, by Professors G. A. Bliss and Edward Kasner. The Yale Colloquium lectures have just appeared from the press of Yale University.

The following papers were read at the April meeting:

H. B. Phillips: "Application of Gibbs's indeterminate product to the algebra of linear systems."

H. B. Phillips: "Concerning a class of surfaces

associated with polygons on a quadric surface."

Virgil Snyder: "Conjugate line congruences contained in a bundle of quadric surfaces."

W. B. Carver: "Ideals of a quadratic number field in canonic form."

G. A. Miller: "On a method due to Galois."

E. H. Taylor: "On the transformation of the boundary in conformal mapping."

W. B. Fite: "Concerning the invariant points of commutative collineations."

R. G. D. Richardson: "On the saddle point in the theory of maxima and minima and in the calculus of variations."

H. H. Mitchell: "Note concerning the subgroups or the linear fractional group $LF(2, p^n)$."

H. H. Mitchell: "The subgroups of the linear group $LF(3, p^n)$."

C. L. E. Moore: "Some infinitesimal properties of five-parameter families of lines in space of four dimensions."

Edward Kasner: "Forces depending on the time, and a related transformation group."

F. H. Safford: "Sturm's method of integrating $dx/\sqrt{X} + dy/\sqrt{Y} = 0$."

G. F. Gundelfinger: "On the geometry of line elements in the plane with reference to osculating circles."

The Chicago Section of the society held its spring meeting at the University of Chicago, April 8-9. The summer meeting of the society will probably be held in New York City early in September.

F. N. COLE,
Secretary

THE AMERICAN CHEMICAL SOCIETY RHODE ISLAND SECTION

The regular March meeting of the section was held March 31, 1910, at the University Club, preceded by the usual informal dinner. Professor William H. Kenerson, of the engineering department of Brown University, presented the paper for the evening on the subject, "Some Problems of the Testing Laboratory." The speaker showed by means of lantern slides the various types of testing machines and explained their method of operation and the results obtained. Then he took up some of the special problems that had been presented to the Brown Laboratory and showed the methods and machines devised to secure accurate results in the solving of these unusual cases.

ALBERT W. CLAFLIN,
Secretary

PROVIDENCE, R. I.